

**AMENDMENTS TO THE SPECIFICATION WITH MARKINGS TO SHOW  
CHANGES MADE**

After the title, add the following:

**--CROSS-REFERENCES TO RELATED APPLICATIONS**

This application is the U.S. National Stage of International Application No. PCT/EP2003/014717, filed December 22, 2003, which designated the United States and has been published as International Publication No. WO 2004/058597 and which claims the priority of German Patent Application, Serial No. 102 61 534.9, filed December 23, 2002, pursuant to 35 U.S.C. 119(a)-(d).--.

Amend the following paragraphs:

**[0007]**       -- According to the invention, the spray can, in contrast to the spray cans known from the prior art, has an additional ~~shaping-area~~ shaped region in the upper can portion, which additional ~~shaping-area~~ shaped region may extend above the whole shoulder area of the spray can. In this ~~shaping-area~~ shaped region, the cross section of the spray can is of a different configuration than the almost circular cross section of the lower can portion. That is to say, the different cross sections along the longitudinal extent of the spray can generally do not have the circular cross section that is present in the lower can portion. This ~~shaping-area~~ shaped region, insofar as it extends above the shoulder area, merges seamlessly into the standardized can opening. Consequently, in the spray cans according to the invention which have a standardized can opening, standardized spraying systems can also be used even when they have no cylindrical body in the ~~shaping-area~~ shaped region.--.

**[0010]**       -- The dies of the device which are used for forming the upper can portion are configured, according to the invention, in such a way that the ~~shaping~~

~~area~~ shaped region of the spray can may additionally be formed by their chosen contours. Thus, the die not only forms the shoulder area and the can opening with collar for the insertable spraying system, but also the additional ~~shaping-area~~ shaped region. For this purpose, the dies in the different cross sections in the ~~shaping-area~~ shaped region have circumferences of the contours which are not of a circular configuration. In the process of formation of the upper can portion, the contours of the dies, thus geometrically modified, also effect the formation of the ~~shaping-area~~ shaped region.--.

**[0012]** -- In this modified method step, the upper can portion with the shoulder area and with the can opening with collar and the additional ~~shaping-area~~ shaped region is formed by the device as claimed in claim 11 or 12. Thus, in the method, no additional production operation is employed compared to conventional production methods instead the spray cans 10 according to the invention are manufactured by the changed or modified production operation. Thus, the known production method for the conventional spray cans (from the prior art) is largely retained so as to affect the optimized sequence as little as possible. In this way, the spray cans according to the invention can also be manufactured in an economical manner.---

**[0013]** -- Advantageously, the production operation for creating the upper can portion with the ~~shaping-area~~ shaped region is the last production operation in the process for manufacturing unfilled spray cans.---

**[0018]** -- Fig. 4.1 shows a longitudinal section through a front view of a die in a device for creating the upper can portion with ~~shaping-area~~ shaped region of the spray can in a first production step;--.

**[0023]** -- Fig. 6.1 shows a plan view of a rotatable clamp plate as part of a device for production of the upper can portion with ~~shaping-area~~ shaped region;--.

**[0027]** -- In the spray can 10 according to the invention, the upper can portion 13 additionally includes a ~~shaping-area~~ shaped region 17 which may also extend above the shoulder area 14. Cross sections in the ~~shaping-area~~ shaped region 17 of the spray can 10 are differently configured than the almost circular cross sections of the lower can portion 11.--.

**[0028]** -- In Figures 1 to 3, a spray can 10 is shown which has oval cross sections in the ~~shaping-area~~ shaped region 17 of the spray can 10. The V-shaped configuration of the spray can 10 can be seen from Fig. 1. This upwardly widening shape of the spray can 10 guarantees ergonomic handling of the spray can 10. In this way, slipping of the spray can 10 during its use, particularly when actuating the spraying system with slippery fingers, is greatly reduced. As can further be seen from Figures 1 to 3, the lower can portion 11 has a constant circular cross section. In this area of the lower can portion 11, the spray can 10 is gripped by a clamping device 23, in a production operation described in more detail below.--.

**[0030]** -- To achieve a degree of safety comparable to that of conventional cylindrical spray cans, it is proposed that the circumference of the circular cross section from the lower can portion 11 is equal in terms of size to the circumference of the differently configured cross section in the ~~shaping-area~~ shaped region 17. This described measure ensures a direct influence on the desired constant wall thickness of the spray can 10. Thus, considerable deformations, as are known from DE 299 10 184 U1, are avoided, and possible weak points of the spray can 10 are eliminated in advance.--.

**[0031]** --The surface of the differently configured cross sections in the ~~shaping area~~ shaped region 17 is advantageously oval or ellipsoid. Ergonomic handling is ensured by this shaping of the spray can 10, and at the same time the maximum degree of safety is achieved. It is advisable to avoid especially narrow radii in the circumference of the cross section in the ~~shaping-area~~ shaped region 17.--.

**[0032]** --Likewise, the surface of the differently configured cross section in the ~~shaping-area~~ shaped region 17 can possess any other shape and can thus approximate to a triangle or rectangle, in which case too the corners are realized by the largest possible radii. By virtue of the freely selectable shaping of the spray can 10, it is possible for any other ergonomic handling of the can to be achieved with, at the same time, a pleasing appearance.--.

**[0036]** --To manufacture a spray can 10 according to the invention (as claimed in one of claims 1 through 10), the device 20 comprises one or more dies 24 for producing the upper can portion 13 with the shoulder area 14 and with the can opening 15 with the collar 16 from a cylindrical hollow body 25 with bottom 12, the shape of the upper can portion 13 being determined by the contours 30 of the die 24. This device 20 is used for pressing the spray can 10 from a cylindrical hollow body 25a with bottom 12. The contours 30 of the die 24 are configured in such a way that the differently configured ~~shaping-area~~ shaped region 17 of the spray can 10 may additionally be formed since the circumferences 31 of the contours 30 are not of a circular configuration at different cross sections in the ~~shaping-area~~ shaped region 17 of a die 24. Thus, the differently configured ~~shaping-area~~ shaped region 17 in the upper can portion 13 is also produced directly by the device 20.--.

**[0038]** --The contours 30 at different cross sections in the ~~shaping-area~~ shaped region 17 of a die 24 advantageously have circumferences 31b of the same length. In this way, the specific shaping in the ~~shaping-area~~ shaped region 17 of the spray can 10 is achieved.--.

**[0039]** --Figures 4.1 and 4.2 show a first die 24a which is mounted on the device 20, in particular on a displaceable die plate 22. In Fig. 1, this die 24a is shown as a longitudinal section through a front view, thus making clear the contour 30a. This die 24a serves for the first forming step of the cylindrical hollow body 25a. It will be clearly seen from Figures 4.1 and 4.2 that the contour 30a in the downwardly open

passage has an oval cross section (see different diameter in the ~~shaping-area~~ shaped region 17). This cross section narrows toward the top and becomes circular for the can opening 15. Figures 5.1 to 5.3 show a second die which is used for the second production step for the cylindrical hollow body 25b. As can be seen from Figures 5.1 and 5.2, the collar 16 is partially formed on the can opening 15 with this die 24b. The circumference 31b of the contour 30b in the cross section V.3 – V.3 can be clearly seen from Fig. 5.3. This circumference 31b of the contour 30b is of oval configuration.

**[0042]** --In the last-mentioned production operation e) for creating the upper can portion 13 with the shoulder area 14 and with the can opening 15 with the collar 16, the device 20 as claimed in claim 11 or 12 is used, by which means the differently configured ~~shaping-area~~ shaped region 17 of the upper can portion 13 can also be formed. Consequently, this modified manufacturing method for the spray can 10 is similar to the known manufacturing method for spray cans from the prior art. Only the production operation e) differs by the use of the device 20 according to the invention. In this way, the optimized manufacturing process for the spray cans known from the prior art is not changed. Consequently, no additional costs are incurred in manufacturing the spray can 10 with the ~~shaping-area~~ shaped region 17. At this point it must also be noted that the sequence of production operations a) to e) in the aforementioned method is not limited to the illustrated sequence, and instead can also vary. It is likewise possible for a production operation to be interrupted in order to perform another production operation. Thus, it is known from the prior art to interrupt production operation e) for production operation d).--.

**[0043]** --In the method according to the invention, the production operation a) for producing an almost cylindrical hollow body 25a with the bottom 12 is advantageously achieved by an inexpensive deep-drawing method. In particular, the already mentioned method of reverse hollow extrusion should be considered here. Thus, the forming of the upper can portion 13 with the ~~shaping-area~~ shaped

region 17 can also be realized by a simple pressing method.--.

**[0044]** --It is likewise advantageous if production operation e) for creating the upper can portion 13 with the ~~shaping-area~~ shaped region 17 is the last production operation in the process for manufacturing unfilled spray cans 10. After this production operation e), the produced spray cans c) are bundled together by a large clamping belt and formed into stacks for transport to a filling center. For this purpose, it is recommended to configure the spray cans 10 in such a way that the shapes of the spray cans 10 match and compensate each other during bundling, i.e. the spray cans lie closely contiguous, since otherwise the bundle becomes thicker toward the top or bottom and would thus lose the hold by the clamping belt.